

CLAIMS

Claims 1-21 (canceled).

Claim 22 (currently amended) A method suitable for church organ flue pipes' sound synthesis ~~which consists in comprising:~~

generating a first sinusoidal sequence (16),

generating a second sinusoidal sequence (17) whose frequency is a multiple of said first sinusoidal sequence's frequency,

generating a harmonic sequence (10) by means of processing said sinusoidal sequences,

generating a periodic sequence (RATE) whose frequency is proportional to said harmonic sequence's frequency,

generating a random sequence and processing said random sequence by means of a rate limiter (42) to obtain a limited rate sequence, and generating a sequence (NOISE) by means of processing said limited rate sequence, and

processing said harmonic sequence (10) and said sequence (NOISE) by means of a closed loop of linear functional blocks to obtain an output sequence (13) which represents the sound of church organ flue pipes.

Claim 23 (previously presented) A method as described in claim 22, wherein said generation of a harmonic sequence step includes processing said sinusoidal sequences (16 and 17) by means of non-linear transformations and envelope generators (20a and 20b).

Claim 24 (previously presented) A method as described in claim 22, wherein said generation of a harmonic sequence step includes the generation of an aleatory signal (RNDPITCH)

which is used to modify the wavelength of said harmonic sequence with an oftenness which is proportional to said sinusoidal sequences' frequency.

Claim 25 (previously presented) A method as described in claim 22, wherein said generation of said sequence (NOISE) step includes generating the random sequence, processing said random sequence by means of the loop containing a rate limiter.

Claim 26 (previously presented) A method as described in claim 22, wherein said generation of said sequence (NOISE) step includes generating the random sequence and processing said random sequence by means of the loop containing delay lines and a rate limiter, said rate limiter being controlled by said periodic sequence (RATE).

Claim 27 (currently amended) A method as described in claim 22, wherein said harmonic sequence and (NOISE) sequence processing step ~~through~~ includes a linear resonator ~~consists in supplying and supplies~~ said harmonic sequence and (NOISE) sequence into the closed loop composed of a delay line and linear filters, and extracting from said closed loop the sequence which represents the church organ flue pipes' synthesized sound.

Claim 28 (currently amended) An electronic device for church organ flue pipes' sound synthesis comprising:

a harmonic component generator (9) to synthesize a main harmonic sequence (10),
a signal generator to synthesize a periodic sequence (RATE),
a noise generator (11) to synthesize a random sequence,
a rate limiter (42) to process said random sequence to obtain a limited rate sequence which is processed to generate a sequence (NOISE), and

a linear resonator (12) generating a sequence (13) representing the sound of church organ flue pipes synthesized by said electronic device.

Claim 29 (currently amended) An electronic device as described in claim 28, said harmonic component generator (9) including two sinusoidal generators,

two non-linear functional blocks whose inputs are connected to said sinusoidal generators' outputs, and

two independent envelope generators, which are connected to said non-linear functional blocks' outputs.

Claim 30 (currently amended) An electronic device as described in claim 28, said harmonic component generator (9) including:

a sinusoidal generator, and

a generator (34) which produces an aleatory sequence (RNDPITCH) whose samples change their random value with an oftenness which is proportional to said sinusoidal generator frequency,

wherein said sinusoidal generator's frequency is modulated by said aleatory sequence (RNDPITCH).

Claim 31 (currently amended) An electronic device as described in claim 28, said noise generator (11) including:

a random sequence generator, and

a closed loop containing a rate limiter, wherein said closed loop is connected to said random sequence generator, and said rate limiter is connected to said signal generator to synthesize a periodic sequence (RATE).

Claim 32 (currently amended) An electronic device as described in claim 28, said linear resonator including:

 a delay line and linear filters forming a closed loop,
 an input node connected to said harmonic component generator (9) and an input node connected to said noise generator (11), and
 an output node where said sequence (13) representing the sound of church organ flue pipes is generated.